

REMARKS

Status of Claims

Applicants respectfully request entry of this amendment. Upon entry of this amendment Claims 23-54 will be pending in this application. The independent claims are 23 and 34. Claims 1-22 are canceled. Claims 23-33 are currently amended. Claims 34-54 are newly added. No new matter is added by this amendment.

Amendment To The Specification

Applicants have amended continuity data of the specification on page 1, at line 9, in accordance with the Examiner's request.

Response To Claim Rejections Under 35 U.S.C. § 112

Claim 29 stands rejected under 35 U.S.C. § 112.

Claim 29 has been amended rendering this rejection moot.

Response To Claim Rejections Under 35 U.S.C. § 102(b)

Claims 23, 24 and 27-30 stand rejected under 35 U.S.C. § 102(b) over U.S. Patent 3,565,751 to Hoekstra (Hoekstra '751).

Applicants respectfully traverse.

Claims 23 and 34 recite "said reactor having a fluidized bed comprising said feed". Applicants' claimed invention employs a fluidized bed comprising said fluidizable feed.

Hoekstra '751 discloses a different technology. Applicant asserts Hoekstra '751 employs a fluidized bed of catalyst and is designed such that the catalyst particles are large enough to be retained within the reactor during its operation. Applicants' claimed invention does not rely on a fluidized catalyst bed and does not require retention of catalyst particles as disclosed by Hoekstra '751. As claimed, the feed itself becomes the fluidized bed.

Hoekstra '751 fails to disclose all of the elements of Applicants' claimed invention and no *prima facie* case of anticipation under 35 U.S.C. § 102(b) exists. Applicants respectfully request the withdrawal of this rejection.

Response To Claim Rejections Under 35 U.S.C. § 103(a)

Traverse Of Rejection Over Hoekstra '751 In View Of Matheson '069

Claims 25 and 26 stand rejected under 35 U.S.C. § 103(a) over Hoekstra '751 in view of U.S. Patent 2,614,069 to Matheson ("Matheson '069").

Applicants respectfully traverse.

Matheson '069 fails to rectify the aforementioned deficiencies of Hoekstra '571.

Applicants assert that Matheson '069 discloses means for maintaining proper fluidization conditions within a fluidized bed having a wide range of particle sizes. Matheson '069 teaches the removal of particles from the reactor at different locations and their re-introduction at different levels to maintain a more uniform distribution of particle sizes through out the fluid bed. As an example, Matheson '069 discloses the recirculation of coal fines of less than about 200 microns and characterizes such a design as a "considerable improvement" (col. 7, lines 1-6).

Matheson teaches the “the retention of fines in the system” and asserts such a design “greatly improves the fluidity of the bed” (col. 8, lines 1-9). The return of coarse solids to the bed is disclosed as “desirable” (col. 8, at lines 1-9). Applicants’ claimed invention does not suffer from these limitations.

Further, Matheson ‘069 discloses the processing of particles having sizes of less than 50 microns to 5 millimeters (col. 6, lines 58-64). As recited, Applicants’ claimed invention is not limited to the sizes of the feed pieces of Matheson ‘069.

Additionally, Applicants claim “said reactor having a fluidizing medium inlet for a gas comprising hydrogen” (claims 23 and 34). Differently, Matheson ‘069 discloses the utilization of steam and CO₂. Matheson does not appear to disclose the fluidizing medium claimed by Applicants.

Applicants assert Matheson ‘069 is different technology in form and function from Applicants’ claimed invention. The disclosures of Hoekstra ‘571 and Matheson ‘069 whether considered separately or in combination do not teach or suggest all claimed elements of Applicants’ claimed invention. Applicants respectfully request withdrawal of the rejection of claims 25 and 26 under 35 U.S.C. § 103(a) over Hoekstra ‘751 in view of Matheson ‘069.

Traverse Of Rejection Over Hoekstra ‘751 In View Of Rosen ‘700

Claims 31-33 stand rejected under 35 U.S.C. § 103(a) over Hoekstra ‘751 in view of U.S. 3,960,700 to Rosen et al. (“Rosen ‘700”).

Applicants respectfully traverse.

As discussed *supra*, Hoekstra '751 discloses a different technology than claimed by Applicants. The teachings of Rosen '700 do not rectify the failings of the Hoekstra '751 disclosure. Hoekstra '751 employs a fluidized bed of catalyst and is designed such that the catalyst particles are large enough to be retained within the reactor during its operation. Applicants' technology is different in that the feed itself becomes the fluidized bed.

As stated, Applicants claim a reactor having a "fluidized bed". Rosen '700 does not appear to disclose a fluidized bed reactor. Teaching away, Rosen '700 states "The heart of the invention resides in the concept of a short total residence time" (col. 1, lines 59-63). Residence times of "about 2 milliseconds to less than 2 seconds" are disclosed (col. 1, lines 46-47). As such the reactor technologies of both Rosen '700 and Hoekstra '571 disclose reactors and process technology different from the invention claimed by Applicants.

The disclosures of Hoekstra '571 and Rosen '700 whether considered separately or in combination do not teach or suggest all elements of Applicants' claimed invention. In view of the above, Applicants respectfully request the rejection of claims 31-33 under 35 U.S.C. § 103(a) over Hoekstra '751 in view of Rosen '700 be withdrawn.

CONCLUSION

Based on the foregoing amendments and remarks, Applicants respectfully assert that all current rejections be withdrawn and assert that all pending claims are allowable and request reconsideration and the allowance of this application.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for the timely consideration of this amendment, or credit any overpayment, to Deposit Account No. 13-4500, Order No. 3495-7000US3. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,

MORGAN & FINNEGAN

By: 

Eric G. Wright

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Registration No. 48,045
(202) 857-7887 Telephone
(202) 857-7929 Facsimile

Correspondence Address:
MORGAN & FINNEGAN
345 Park Avenue
New York, New York 10154
(212) 758-4800
(212) 751-6849 Facsimile